

Seven New Species of New Zealand Land Mollusca.

By A. W. B. POWELL, Assistant Director.

CYCLOPHORIDAE.

Genus MURDOCHIA Ancey 1901.

Murdochia ampla n. sp. Pl. 51, fig. 10.

Shell large for the genus, trochiform, umbilicate. Spire slightly taller than height of aperture. Whorls 6, including a small, smooth, globular protoconch of one whorl. Outlines of whorls and base strongly convex. Sculpture consisting of close, weak, obliquely retractive growth lines. Aperture circular. Peristome continued as a callus across parietal wall; outer lip, as well as basal and columellar sections of lip, slightly expanded and very narrowly duplicated. Umbilicus one seventh major diameter of shell. Colour uniformly dull reddish-brown.

Height, 6 mm.; major diameter, 6 mm. (Holotype).

Holotype: In Auckland Museum.

Locality: Unuwahao, 800-900 feet, between Spirits Bay and Tom Bowling Bay, Northern N.Z. (A.W.P.B. 1932).

This species is nearest to *lignaria* Pfeiffer 1857, which, however, is smaller, $1-1\frac{1}{2}$ whorls less, and has a proportionately shorter spire. The dimensions of the type of *lignaria* were given as height 4 mm., diameter 5 mm., but average specimens are only height 2.9 mm., major diameter 3.3 mm.

ENDODONTIDAE.

Genus FECTOLA Iredale 1915.

Type: *Helix infecta* Reeve.

Fectola marsupialis n. sp. Pl. 51, fig. 9.

Shell very small, depressed, widely umbilicate, thin, closely radially ribbed. Whorls 5, including a closely radially striate protoconch of $1\frac{1}{2}$ whorls. Post-nuclear sculpture of sharp, obliquely protractive ribs 8-9 per millimeter on the body-whorl. Colour pale-buff, very faintly and sparsely maculated with light yellowish-brown. Umbilicus one third major diameter of shell in adult, more than one third in younger shells. The species has

the curious habit of the Cook Island genus *Libera* of adapting the umbilicus for housing eggs and young. In half grown shells the umbilicus is wide and perspective, but sexually mature individuals have the last whorl constricted slightly around the umbilicus, forming a vertical sided deep cavity in which three eggs or the same number of embryonic shells are often found. Spire slightly raised.

Height, 1.6 mm.; major diameter, 2.9 mm. (Holotype).

Holotype: Presented to Auckland Museum.

Locality: Pelorus Bridge, Marlborough. (A.W.P.B. 22nd December, 1927).

The species is closely similar to *buccinella* Reeve in sculpture, but has a slightly taller spire and the very distinctive umbilical characters described above.

Genus PHRIXGNATHUS Hutton 1883.

Type: *Helix fatua* Hutton (= *celia* Hutton).

Phrixgnathus oconnori n. sp. Pl. 51, fig. 11.

Shell minute, trochoid, umbilicated, sculptured with flexuous membranous radial riblets, about 7 per millimeter. Whorls $4\frac{1}{2}$, including a smooth convex protoconch of $1\frac{3}{4}$ whorls. Spire $1\frac{1}{4}$ times height of aperture. Periphery lightly angled and keeled. Spire whorls and base lightly convex. Umbilicus about one sixth diameter of base. Radial riblets retractively bracket-shaped on spire whorls, being produced medially to a pointed angulation; evenly arcuate but weaker on base. Interstices with dense microscopic flexuous radial lines and still finer dense radial striae. Colour light yellowish-brown with broad regular radial streaks of light reddish-brown, distinct on spire but obsolete on base.

Height, 1.8 mm.; diameter, 2.5 mm.

Holotype: Presented to Auckland Museum by Mr. A. C. O'Connor.

Locality: Pirinoa, Lake Wairarapa.

The species differs from *P. phrynia* in being more trochoid in outline, in having a wider umbilicus and bracket-shaped ribs.

FLAMMULINIDAE.

Genus PHELUSSA Iredale 1915.

Type: *Helix hypopolia* Pfeiffer.

Phelussa oconnori n. sp. Pl. 51, figs. 12 and 13.

Shell of moderate size, depressed, umbilicated, closely radially ribbed and strikingly patterned with dark red-brown on a buff ground. Whorls $5\frac{1}{4}$, including a typical smooth protoconch of $1\frac{3}{4}$ smooth, flattish whorls. Sculpture consisting of dense sharp

radial riblets, nine per millimeter, interspaces clearly but minutely reticulated by subsidiary radial and spiral lines. Spire a little less than half height of aperture. Umbilicus about one seventh diameter of base. Aperture lunate. Outline of shell strongly convex with periphery high up on body-whorl, in line with suture. Colour pattern in the form of broad wide-spaced dark red-brown radials on the spire whorls, resolving into zigzags and isolated spots and dashes over the peripheral area, and on the base again becoming coalescent as radial zigzags towards the umbilicus where they fade out altogether.

Height, 3.5 mm.; diameter, 5.3 mm. (Holotype).

Holotype: Presented to Auckland Museum by Mr. A. C. O'Connor.

Locality: Cole's Flat, 500 feet, Anatoki River, West Nelson.

Genus ALLODISCUS Pilsbry 1892.

Type: *Helix dimorpha* Pfeiffer.

Allodiscus tessellata n. sp. Pl. 51, figs. 1 and 2.

Shell small, depressed, openly umbilicated, thin, closely radially ribbed, 12 per millimeter, interstices minutely reticulated with close, microscopic radial lines and still finer and closer spiral striae. Spire $\frac{1}{4}$ height of aperture. Whorls $4\frac{1}{4}$, including a typical lightly convex spirally striated protoconch of $1\frac{3}{4}$ whorls. Outline of whorls strongly and evenly convex. Aperture lunate. Base rounded, impressed towards an open circular umbilicus one twentieth the major diameter of the shell. Inner lip very little reflexed, scarcely encroaching upon the umbilicus. Colour pattern in the form of an even tessellated pattern of rectangular patches of reddish-brown upon a pale buff ground. A circular zone around the umbilicus is clear of colour markings. On the spire whorls there are three spiral series of tessellations.

Height, 2.3 mm.; diameter, 3.8 mm. (Holotype).

Holotype: Presented to Auckland Museum by Mr. A. E. Brookes.

Locality: Ruatoki, about 800 feet, Bay of Plenty.

The species stands nearest to *tullia* (Gray), which is rather similarly tessellated, but differs in having an open umbilicus and deeper, more compact whorls.

HELICARIONIDAE.

Genus HELICARION Ferussac 1819-1821.

Type: *Helicarion cuzieri* Ferussac.

Subgenus PELOPARION Iredale 1937.

Type: *Vitrina hyalina* Pfeiffer.

Helicarion (Peloparion) cumberi n. sp. Pl. 51, figs. 6, 7 and 8.

Shell small, depressed, auriform, hyaline, pale-yellow, glossy, having a widely open base-aperture which is narrowly membranous. Whorls $2\frac{1}{2}$, rapidly increasing, including a densely

spirally striated protoconch of $1\frac{1}{4}$ whorls. Post-nuclear sculpture of crisp, strongly arcuate regular radials, obsolete over the last half of the body-whorl. The whole shell is covered with dense microscopic radial growth striae crossed by regular, more distant spiral subobsolete linear grooves. The base is cut away and merged into one big apertural cavity. The actual shell encroaches to a small extent over the base as a narrow, convex margin which is extended slightly by a narrow membranous extension of the epidermis. Even with this membrane more than half of the diameter of the base is open.

The contracted dried animal in one of the specimens indicates that the tail is considerably shorter than in *Otoconcha* and is truncated.

Height, 1.75 mm.; major diameter, 4.1 mm.; minor diameter, 2.9 mm. (Holotype shell only).

Holotype: In Auckland Museum. Presented by Mr. R. A. Cumber.

Locality: Maruia Springs, Lewis Pass, Nelson.

On shell characters and taking into consideration the short truncated tail, the species would appear to be correctly placed. The protoconch in *Otoconcha* is smooth, but I have not been able to ascertain if that of *hyalina* is spirally striated, as in *cumberi*.

In *Otoconcha* the whole of the base is absent and the shell is only partly external: in *cumberi* the base is partly formed and most of the rest of the shell is external.

Some details of the dentition are available from portions of a radula retrieved from a dried specimen. The scattered fragments show tricuspid laterals with narrow, rectangular basal plate and fifteen marginals which are very oblique, with wide bases, the outermost two with one cusp, the third to eighth with two cusps, and the remainder tricuspid, gradually becoming more erect towards the laterals. The central could not be distinguished from the laterals.

Helicarion (s.l.) **oconnori** n. sp. Pl. 51, figs. 3, 4 and 5.

Shell moderately large, thin, semi-transparent, but strong, auriform, pale-yellowish, densely striated and with a widely open base-aperture. Whorls $2\frac{3}{4}$, rapidly increasing, including a smooth protoconch of $1\frac{1}{2}$ flattened whorls. Post-nuclear whorls densely sculptured with crisp narrow spiral lirae. There are, in addition, fairly numerous radial growth lines. The base is cut away and merged into one big apertural cavity. The broadly convex, moderately deep body-whorl continues marginally over the base to almost a third of its width at early growth, but becomes proportionately and progressively very much less as the body-whorl expands.

Height, 4.25 mm.; major diameter, 8 mm.; minor diameter, 6 mm (Holotype).

Height, 5 mm.; major diameter, 10.9 mm.; minor diameter, 8 mm. (Punipaua).

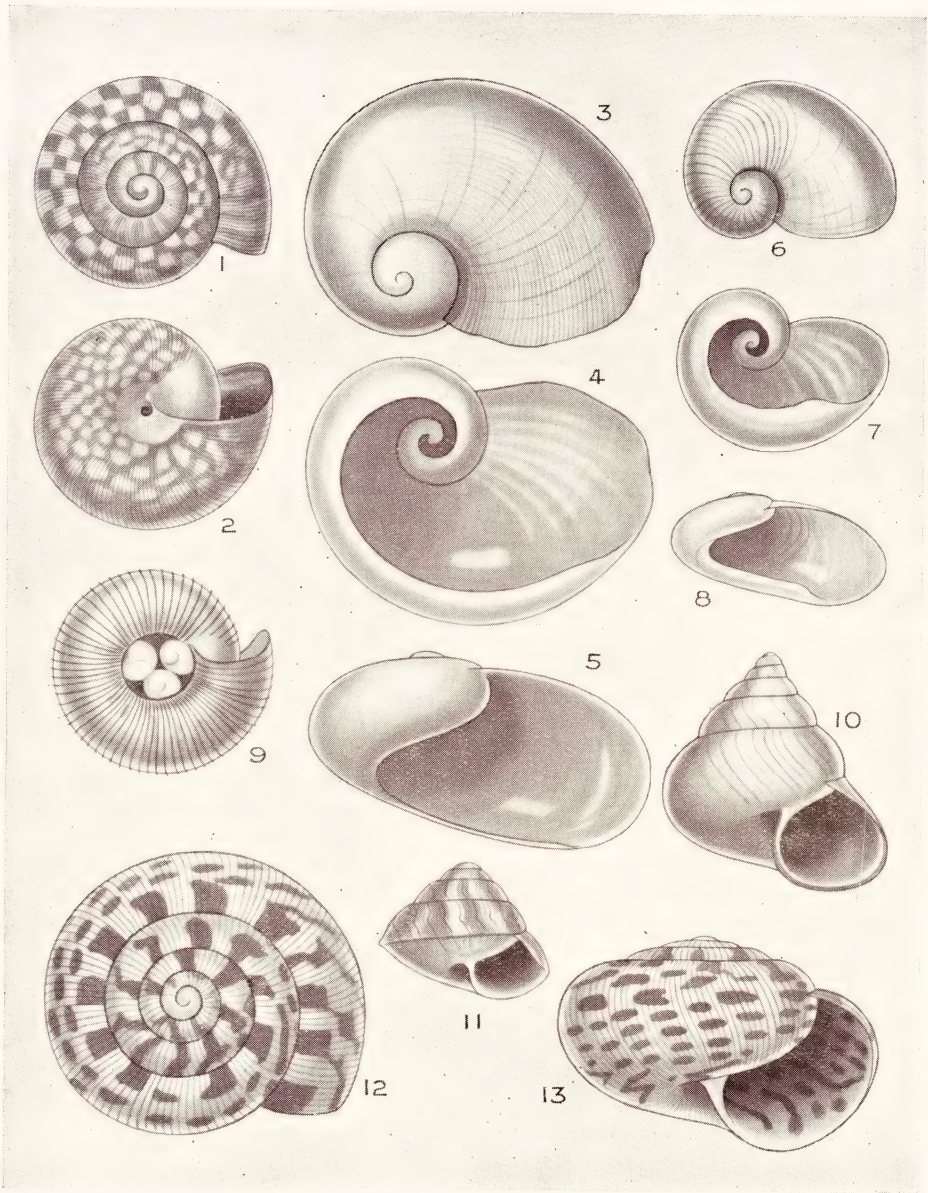
Holotype: In Auckland Museum. Presented by Mr. A. C. O'Connor.

Localities: Anatoki. Forks, 2,500 feet, West Nelson (under a log. A. C. O'Connor). Punipaua Creek, near Patarau River, West Nelson, Sub-recent (A. C. O'Connor). Doctor's Creek, Collingwood district, West Nelson (Mrs. M. Mouat).

The generic placing of this species is purely provisional, for the animal is unknown and the striated shell and cut-away base are features discordant with the typical genus. Neither can it be closely associated with *cumberi*, which has a striated protoconch, that of *oconnori* being smooth. Portions of the dried animal in the case of the Doctor's Creek specimen indicated a longer tail than in *cumberi*, not so abruptly truncated, and the fact that the ventral edge of the shell was covered by the animal.

Living or well preserved specimens will probably show this species to represent a new subgenus of *Helicarion* showing affinity with *Peloparion*.

These two members of the *Helicarionidae* add a family to the New Zealand fauna.



Figs. 1 & 2. *Allodiscus tessellata* n. sp. Holotype. 2.3 x 3.8 mm.

Figs. 3, 4 & 5. *Helicarion* (s.l.) *oconnori* n. sp. Holotype. 4.25 x 8 mm.

Figs. 6, 7 & 8. *Helicarion* (*Peloparion*) *cumberi* n. sp. Holotype. 1.75 x 4.1 mm.

Fig. 9. *Fectola marsupialis* n. sp. Holotype. 1.6 x 2.9 mm.

Fig. 10. *Murdochia ampla* n. sp. Holotype. 6 x 6 mm.

Fig. 11. *Phrixgnathus oconnori* n. sp. Holotype. 1.8 x 2.5 mm.

Figs. 12 & 13. *Phelussa oconnori* n. sp. Holotype. 3.5 x 5.3 mm.